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Raymond P. Shafer

GOVERNOR

COMMONWEALTH OF PENNSYLVANIA
GOVERNOR'S OFFICE
HARRISBURG

THE GOVERNOR

October 16, 1968

Mr. L. F. Burlein
Chairman, Pennsylvania
Turnpike Commission
Commonwealth of Pennsylvania
Harrisburg, Pennsylvania 17120

Dear Les:

Congratulations on the completion of your latest 100 million dollar improvement program along the Pennsylvania Turnpike -- the grandfather of the nation's Interstate Highway System.

These three new tunnels and a 13 1/2 mile bypass are certainly in keeping with the long tradition of outstanding service to highway travelers established by the Turnpike when it first was opened more than 28 years ago.

I am certain that, because of your attention to continuing improvements in the roadway itself, future travelers along the pike will be able to complete their journeys with a greater degree of enjoyment and safety than ever before.

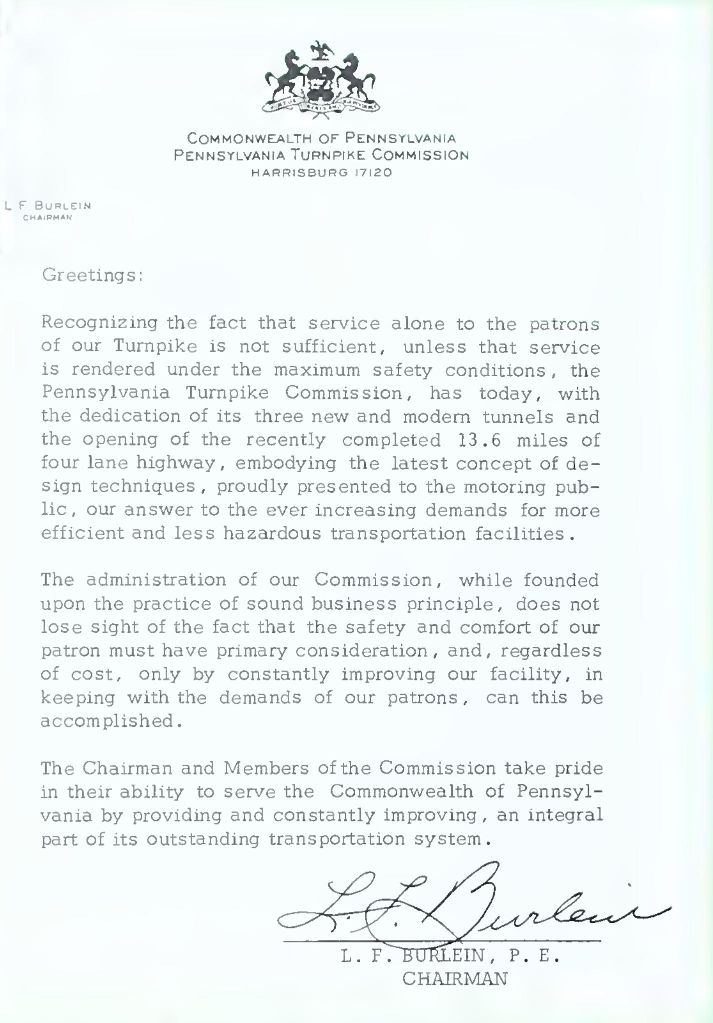
Sincerely,

Ray

RAYMOND P. SHAFER

COMMISSIONERS

Lester F. Burlein
CHAIRMAN



COMMONWEALTH OF PENNSYLVANIA
PENNSYLVANIA TURNPIKE COMMISSION
HARRISBURG 17120

L F BURLEIN
CHAIRMAN

Greetings:

Recognizing the fact that service alone to the patrons of our Turnpike is not sufficient, unless that service is rendered under the maximum safety conditions, the Pennsylvania Turnpike Commission, has today, with the dedication of its three new and modern tunnels and the opening of the recently completed 13.6 miles of four lane highway, embodying the latest concept of design techniques, proudly presented to the motoring public, our answer to the ever increasing demands for more efficient and less hazardous transportation facilities.

The administration of our Commission, while founded upon the practice of sound business principle, does not lose sight of the fact that the safety and comfort of our patron must have primary consideration, and, regardless of cost, only by constantly improving our facility, in keeping with the demands of our patrons, can this be accomplished.

The Chairman and Members of the Commission take pride in their ability to serve the Commonwealth of Pennsylvania by providing and constantly improving, an integral part of its outstanding transportation system.

L. F. Burlein

L. F. BURLEIN, P. E.
CHAIRMAN

William A. Meehan
VICE CHAIRMAN

Patrick E. Kerwin
SECRETARY-TREASURER

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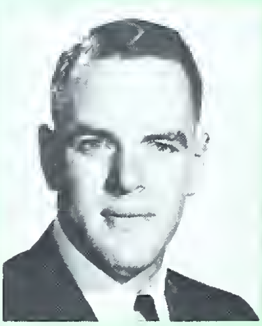

Robert G. Bartlett
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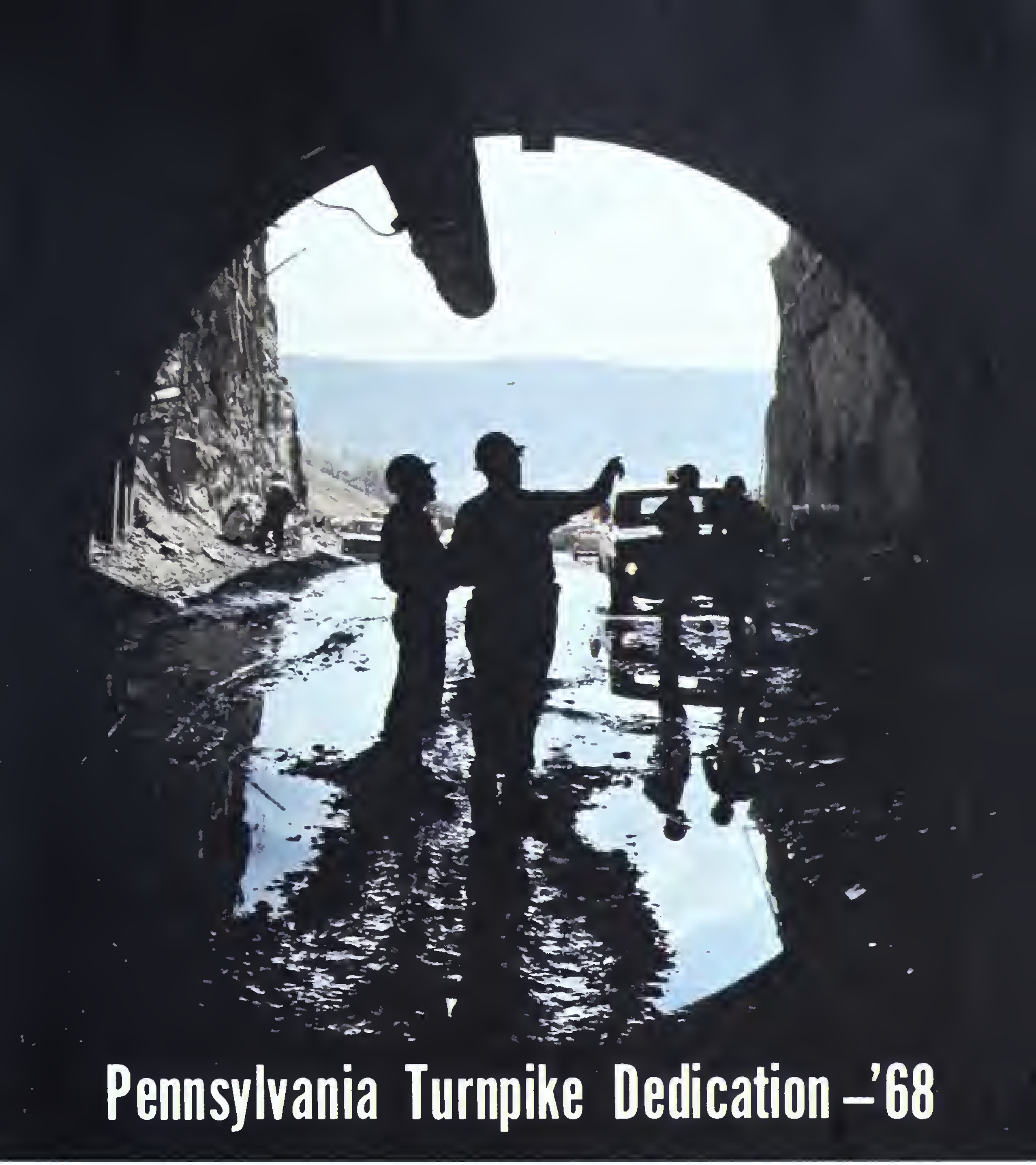
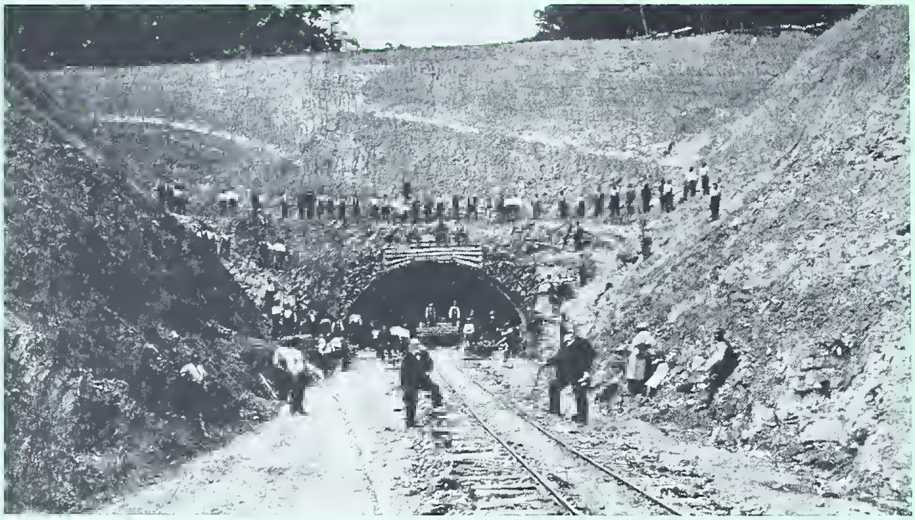


Pennsylvania Turnpike Dedication –'68

Historical Background

In Pennsylvania, a major impediment to the smooth flow of transportation from east to west has always been the extensive mountain range in the western part of the state. In 1839, the State commissioned Col. Charles L. Schlatter to conduct surveys for a rail line between Harrisburg and Pittsburgh. These surveys resulted in three proposed routes, the northern, the middle and the southern. It is a tribute to Schlatter's foresight and ability that his middle route later became the route of the Pennsylvania Railroad, and his southern route, what is now basically that of the Pennsylvania Turnpike.



Turnpike - 1884. Andrew Carnegie, left foreground, and William H. Vanderbilt, with cane, pose at the construction site of one of the tunnels of their South Penn Railroad project, which later became the route of the Pennsylvania Turnpike.

Through The Mountain

In 1863, it was the intention of the small, independent South Pennsylvania Railroad to develop this southern route as part of a plan linking east and west. A few miles of right-of-way were actually constructed and operated by the railroad between 1854 and 1883. Lack of funds, however, prevented further development at that time.

In 1881, however, William H. Vanderbilt, incensed by what he considered flagrant interference in the affairs of his New York Central Railroad, retaliated by undertaking to challenge the Pennsylvania Railroad in its own territory. Buying the controlling interest in the South Penn, he laid plans to reactivate the company's southern route project, and, with existing railroad connections, complete a shorter, more direct line from New York to the west -- in direct competition to the Pennsylvania Railroad.

In this effort he was enthusiastically joined by Andrew Carnegie, who personally offered to subscribe five million dollars to the project. Work progressed at a rapid pace, eventually resulting in five million yards of grading and nine tunnels, six of which were eventually to be used in construction of the turnpike.

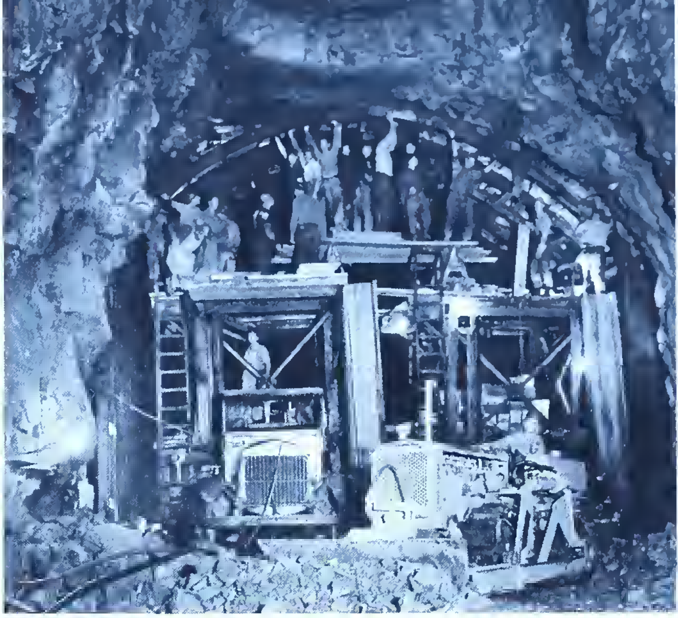
At this time, John Pierpont Morgan the noted financier was becoming increasingly disturbed at this wasteful duplication and cut-throat competition, and its potentially disastrous effect on the railroad economy as a whole. After considerable effort and persuasion, he succeeded in convincing both Vanderbilt and George Roberts, Pennsylvania Railroad president, to settle their differences with a compromise, which, among other important considerations, resulted in Vanderbilt's relinquishing the South Penn project. Work ceased as suddenly as it had begun and the grading and tunnels fell idle, remaining almost forgotten for fifty years.

Though it was frequently referred to as "Vanderbilt's Folly" at the time, the South Penn project had an exciting, but little-suspected future awaiting.

Turnpike . . .

A half-century later, in the depths of the great depression of the 30's, a new idea began to take shape -- a modern, four-lane, super-highway to stretch from one end of the Commonwealth to the other.

Forward-looking men now remembered and turned their attention to the old South Penn tunnels and road bed, by this time overgrown, flooded in some areas, and in general suffering from its fifty years of disuse and neglect.

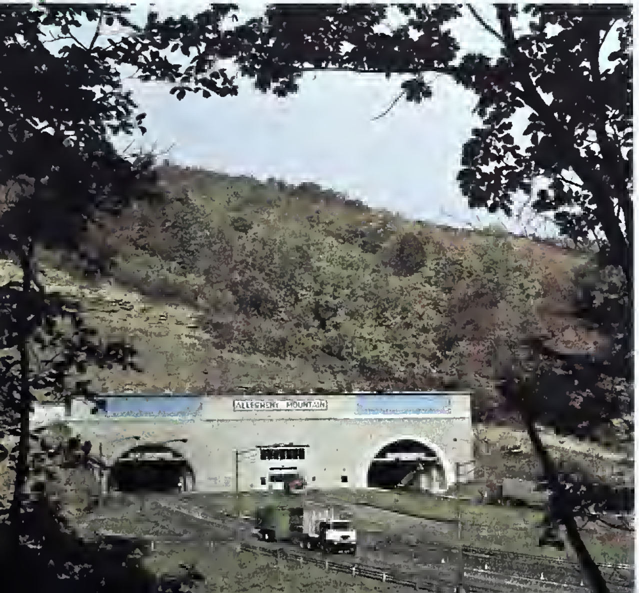


1939 Crew reconstructing one of the 50-year-old South Penn tunnels for Turnpike use. Six of the nine tunnels were used in the original Pennsylvania Turnpike.

Studies initiated by the Pennsylvania State Planning Board indicated that much of the old South Penn project was in amazingly good condition and, thanks to its remarkably skilful and well-planned construction, fully practical for rehabilitation and highway adaptation. Accordingly, the Pennsylvania Legislature on May 21, 1937 passed an act creating the Pennsylvania Turnpike Commission to build and operate the proposed highway. The Commission was authorized to raise revenue to finance the project, but the law stipulated that not a penny of State tax money was to be involved in it.

It is significant to note that the first portion of the Turnpike to be built - the original 160 miles opened in 1940 -- was between Middlesex, just west of Carlisle and Irwin, just east of Pittsburgh, right through the toughest part of the route, the mountainous region that had balked so many transportation projects over the years. It is this same region and these same mountains that have been involved in today's Project '68.

Following its original opening, the Turnpike expanded rapidly. By 1950 the extension to Philadelphia was opened. In 1951 the Western Extension to the Ohio state line was completed. In 1954 the Delaware River Extension opened and in 1956 the Turnpike Bridge, connecting with the New Jersey Turnpike was opened to traffic. Meanwhile, work on the Northeast Extension was also progressing at a rapid pace, opening in sections -- to Allentown and Emerald in 1955 and Wilkes-Barre and Scranton in 1957.



By 1960 it was evident that the two-lane tunnels on the original Turnpike could not adequately handle the vastly increased traffic which had developed. First attention was paid the most critical areas, Laurel Hill and Allegheny. In the case of Laurel Hill a four-lane bypass, completely eliminating the existing tunnel was constructed and opened for traffic in 1964.

Almost simultaneously work was begun on a second tunnel, parallel to the existing one at Allegheny, which opened early in 1965. The original Allegheny tunnel was then renovated and both sections opened in time for Labor Day in 1966.

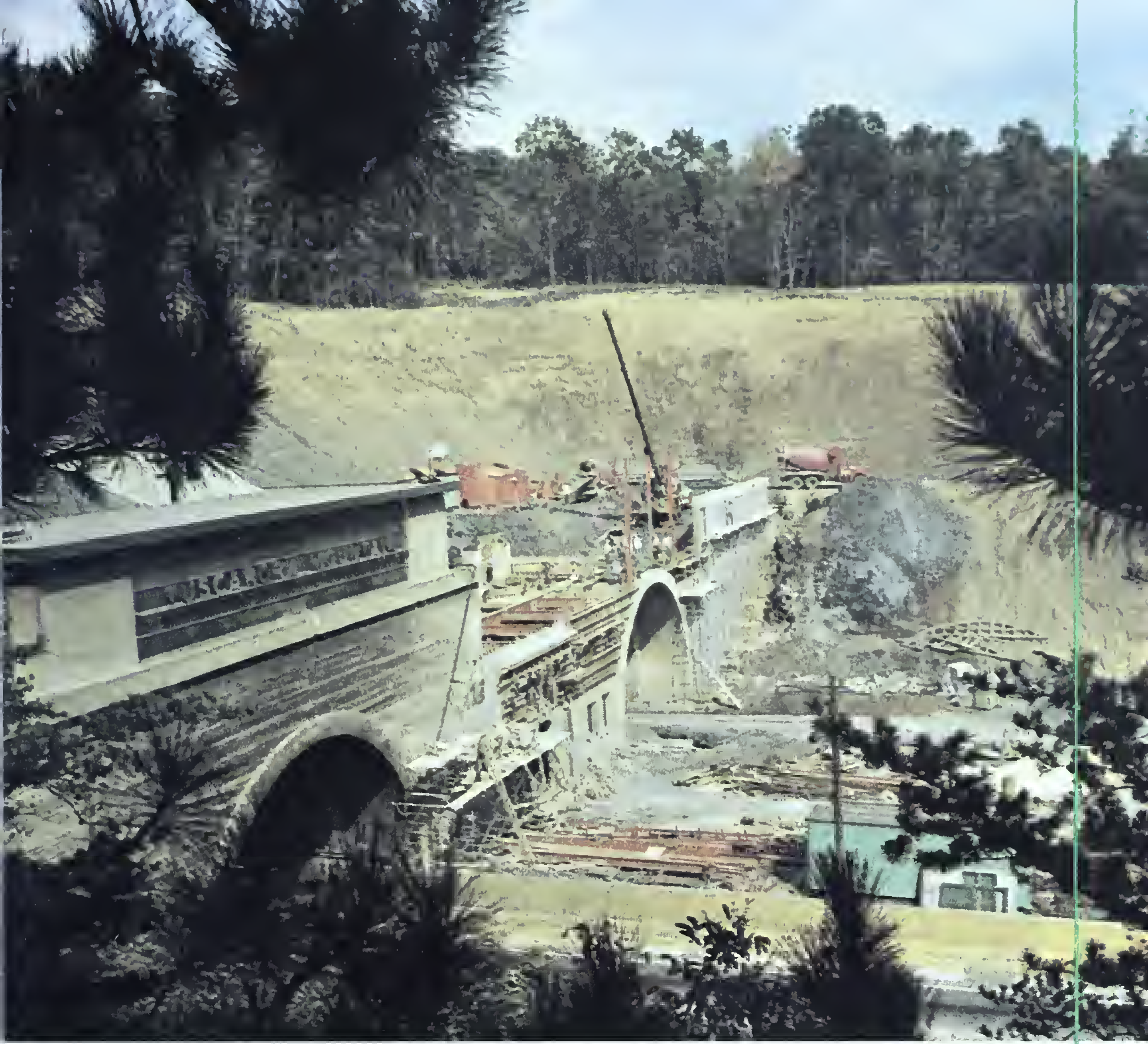
Dedication-'68

Although the Laurel Hill and Allegheny projects had helped alleviate the conditions in those particular locations, similar problems existed in the area between Carlisle and Bedford. This was caused by two-lane tunnels at Blue Mountain, Kittatinny, Tuscarora, Sideling Hill and Ray's Hill.

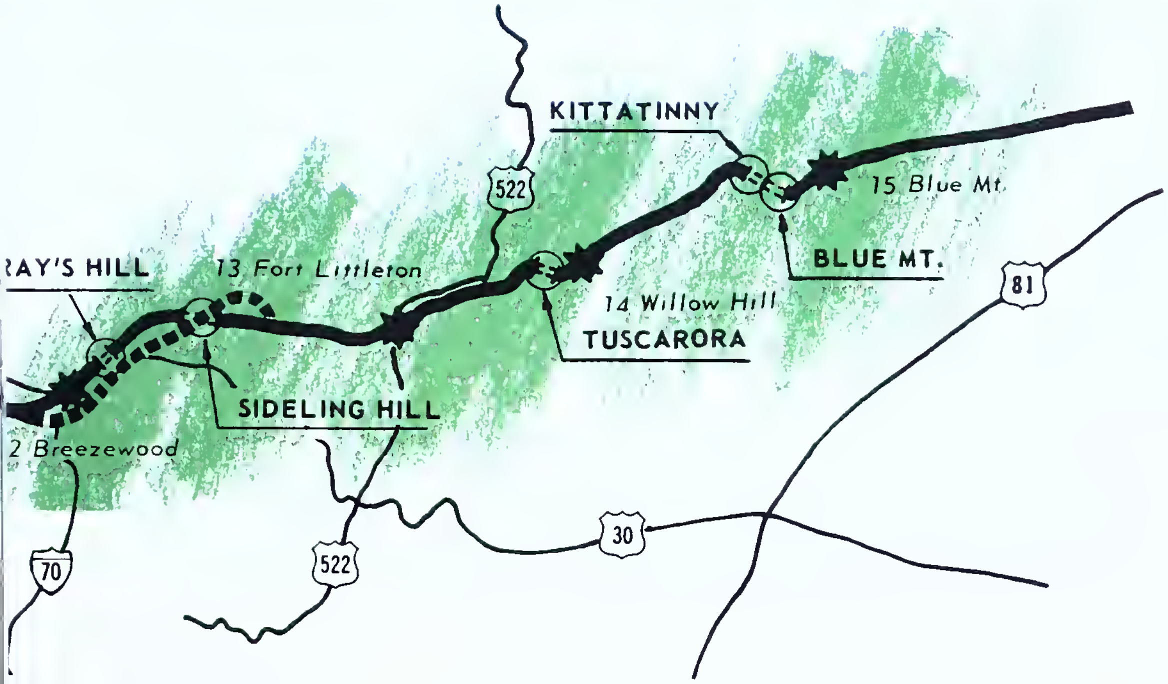
Extensive surveys indicated that the best solution to this situation would be the construction of additional parallel tunnels, similar to the one at Allegheny, through Blue, Kittatinny and Tuscarora Mountains, and a four-lane bypass completely eliminating the Sideling Hill and Ray's Hill tunnels. This project would complete the conquest of the troublesome mountain region. For the first time, the long-standing dream would be realized -- an intersection-free four-lane highway completely uninterrupted from one end of Pennsylvania to the other.

Contracts for both portions of the project, the tunnels and the bypass, were let in 1960. Target date: 1968.

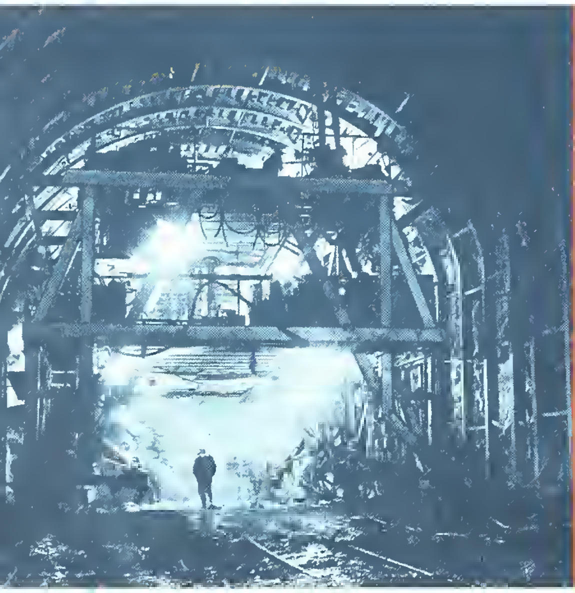
From the accompanying map you can get an inkling of the enormity of Project '68. Tunnel construction was let in two separate sections, one for Blue and Kittatinny Mountains and one for the mile-long Tuscarora tunnel. Three additional contracts provided for the 13-mile Ray's Hill - Sideling Hill bypass, features of which included special climbing lanes for trucks and construction of a new east-and-west bound service area, replacing the former west-bound Cove Valley area.



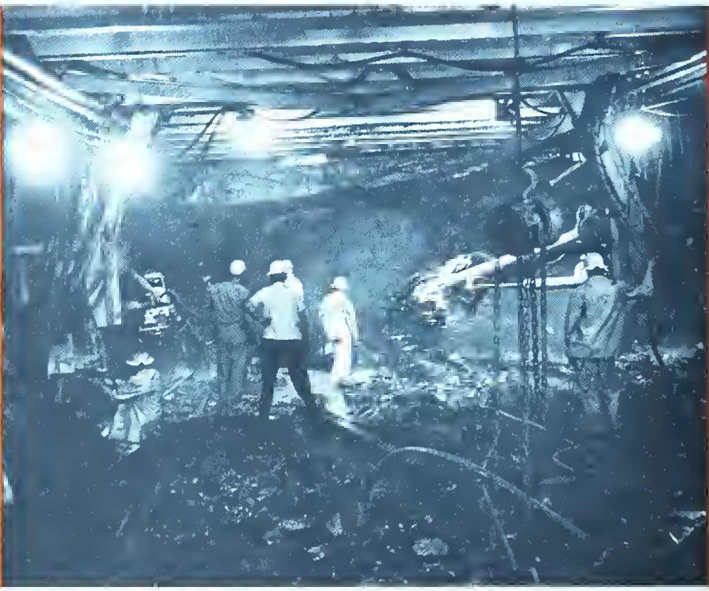
Portal building construction at Tuscarora, one of the three locations supplemented with new tunnels, parallel to the old ones.



Tunnel Construction



"Jumbo" drilling rig holds multiple drills...



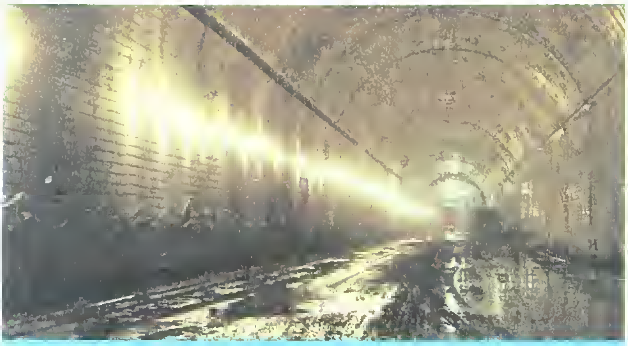
...to drill blasting pattern in the face of the rock.

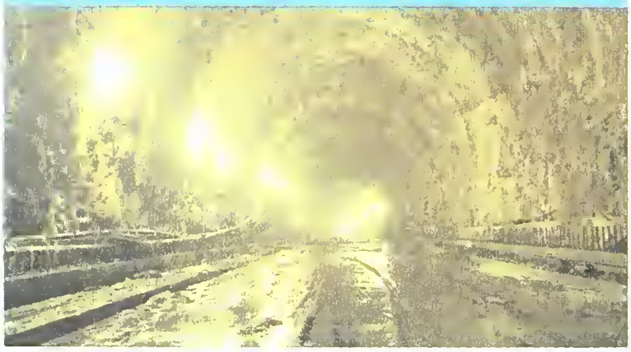
Clearing The Way

To build the parallel tunnels in Project '68, it was first necessary to clear the entrance areas in preparation for the actual mining. Tons of earth and rock had to be moved and roads constructed to facilitate the approach. A quick look at these "before and after" shots will show how the entire landscape had to be changed.

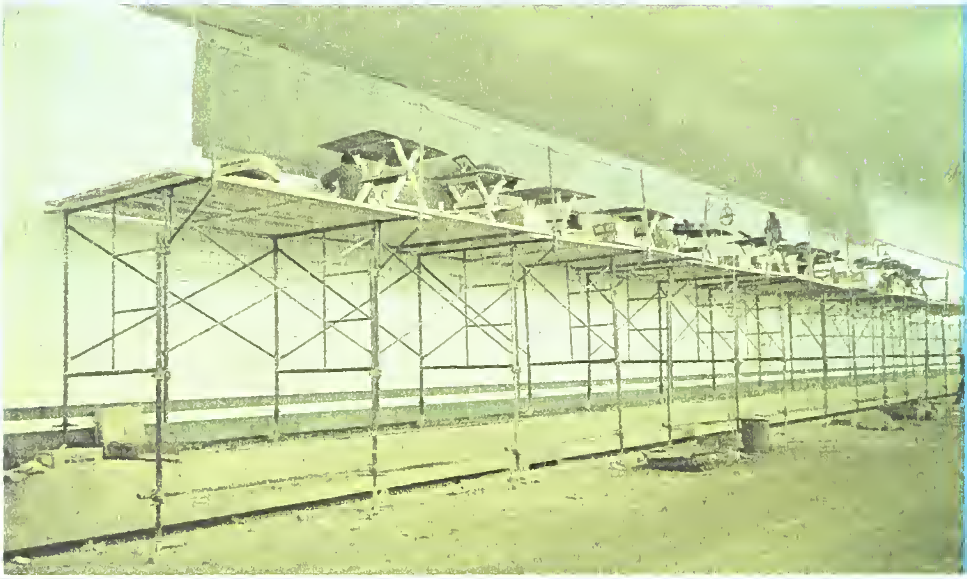
Drilling

Once cleared, the face of the tunnel is approached by a massive "jumbo" drilling rig -- a movable platform on which as many as ten drills are mounted to drill a pattern of holes for the placement of explosives. The rig is then moved (in this case on rails) out of the way for the actual firing. As soon as the blast is completed, the muck is cleared out and support steel is immediately put in place to prevent any possible shifting of rock.





Interior Construction



Gallery Drain

The first step in interior construction -- even before the lining is applied -- is the installation of the gallery drain. This drain runs the length of the tunnel beneath the road surface, and is large enough for men to walk through, which they do at periodic intervals for the purpose of cleaning. Inside this drain is a water pipe running its length to flush the drain when needed. It is interesting to note that every spring, rivulet or even wet spot on the interior surface of the tunnel is connected by its own individual pipe to this drain to eliminate any problems due to water seepage. Access to the drain is provided at intervals throughout the tunnel.

Lining

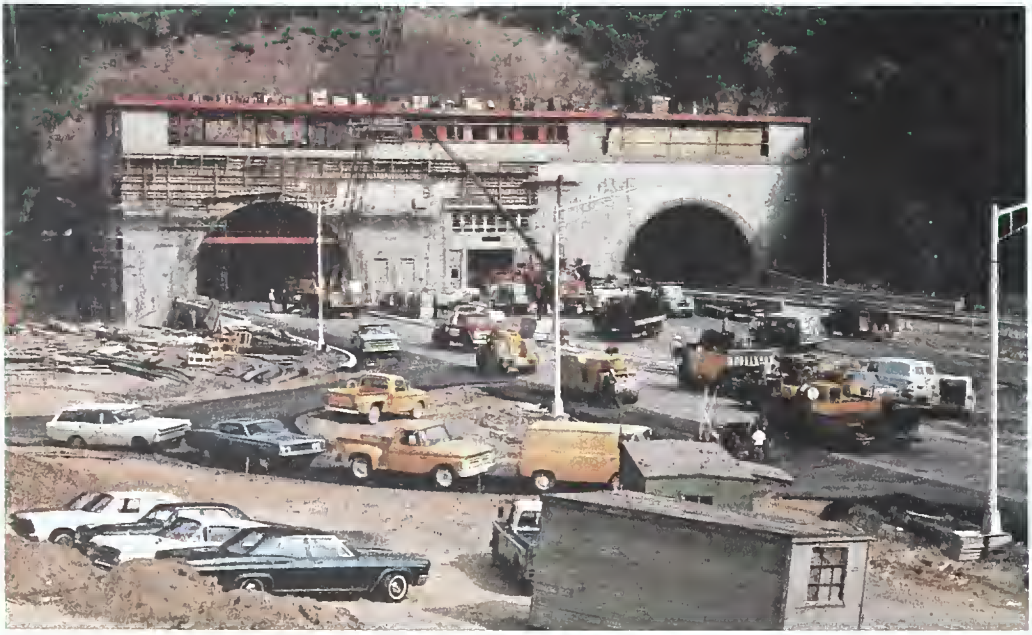
Next, the interior lining is put in place. Concrete forms are placed in position, concrete is pumped in under pressure and after it is set, the forms are removed. In the pictures here, we see in order: the mined hole, the concrete form, and the concrete lining.

The concrete ceiling is poured, and forms an air space above in the archway of the tunnel for use in ventilation. The concrete roadway and curbing is constructed and the interior is ready for finishing.

Tiling

Here you see tiling being installed. Tile has proved to be outstanding for durability, improvement of visibility, and cleanability. The tiles in Project '68 alone, if placed end to end would reach from one end of the Commonwealth to the other. An innovation in this project has been the installation of red tiling to mark the location of the emergency phones, which are placed every 500 feet throughout the length of the tunnels.

Also of special interest is the new fluorescent lighting again designed just for these tunnels. It extends in continuous lines from one end to the other. The average motorist may not notice it, but the intensity of light is brighter toward either end of the tunnel to reduce the visual adjustment needed in entering the tunnel from daylight. In addition, an automatic control regulates the total intensity of the lighting, making it brighter in daylight and sunny hours and less bright at night. The coverings of the fixtures are equipped with specially designed prisms to direct the light evenly on the roadway. These prisms are formed on the inside of the glass to facilitate cleaning.



Buildings

While the interior finishing is taking place, construction of the buildings at the ends of the tunnels is already underway. These buildings house the controls for all the ventilating, lighting and electrical facilities of the tunnels. In addition they house three giant fans at each end of each tunnel for ventilation -- a total of 18 in the three-tunnel complex.

A word should be said about the emergency generating equipment housed in these buildings. In case of power failure, these turbine-powered generators automatically switch into action and provide emergency current. It must be emphasized that this power is not just a minimum makeshift or substitute, but full power for every electrical requirement in normal operation of all tunnel facilities.

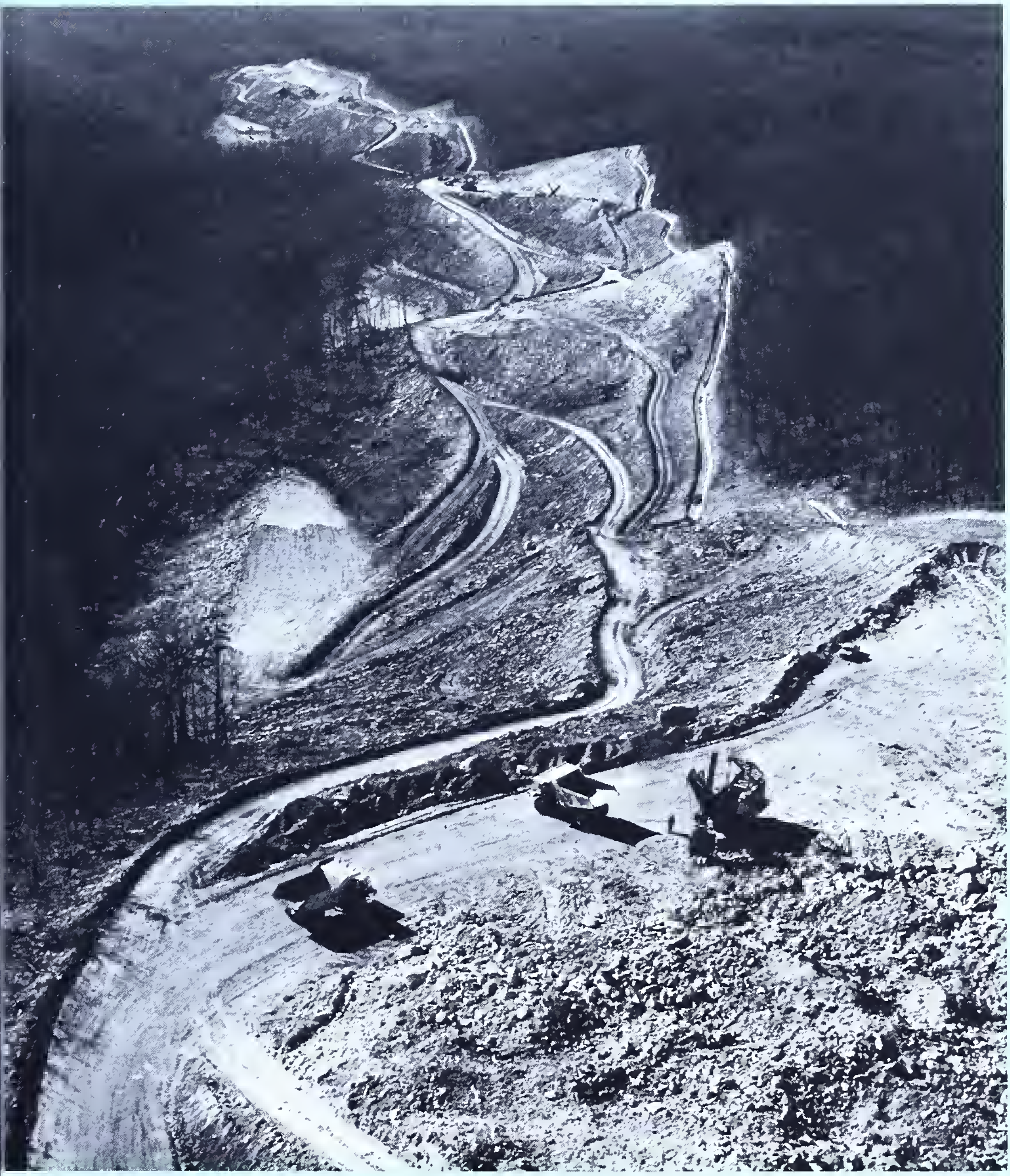
Two additional design features of the tunnels deserve special mention. The first is the installation of cross-passageways between the new tunnels and the old ones lying parallel to them. There are three of these in each tunnel -- at the midway and quarter points. They provide extra access to all parts of the tunnel in case of emergencies, and enable the continuous inspection patrol to cross from one tunnel to the other whenever it might become advisable.

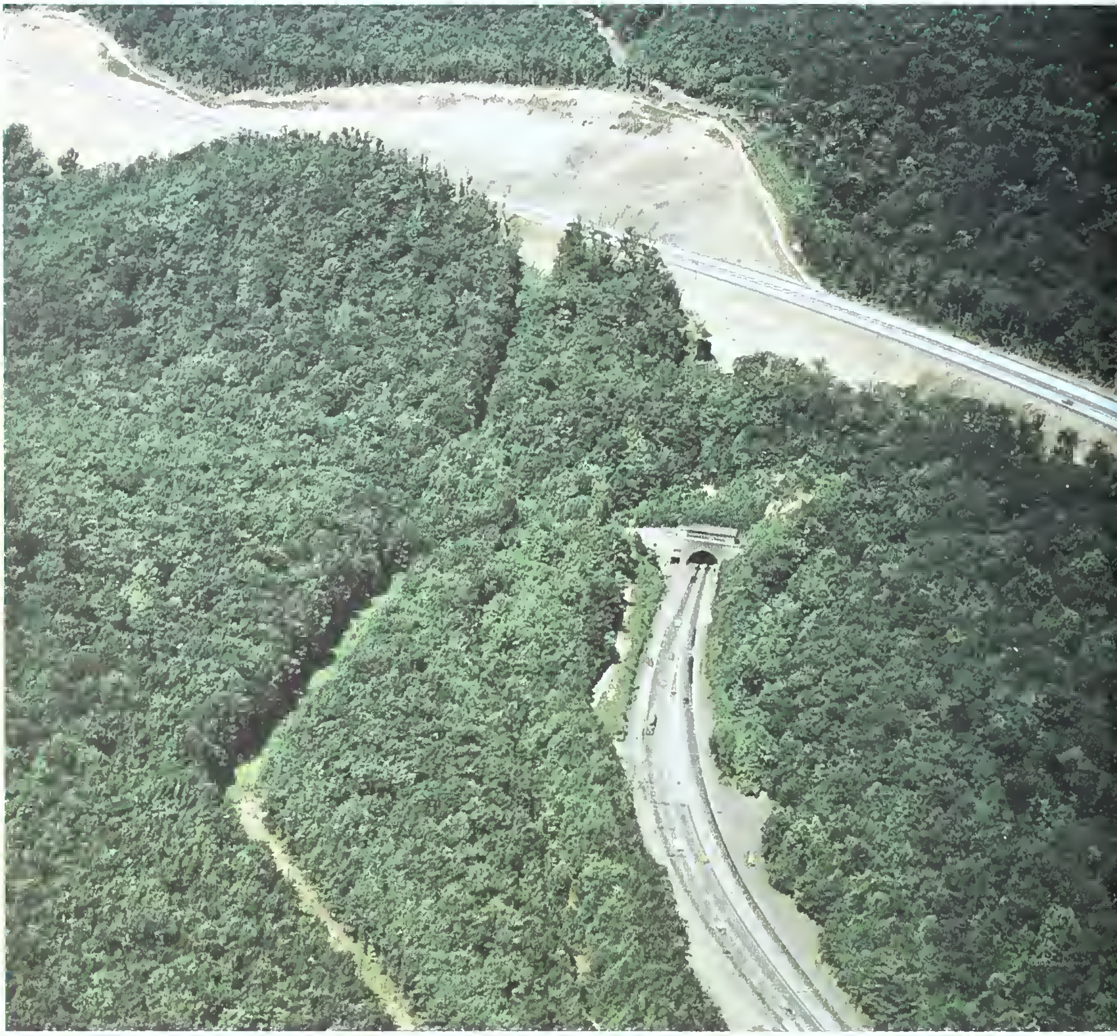
The other feature is an arrangement of crossover lanes at the entrance to each tunnel, permitting traffic to be diverted from one to the other in case of emergency or for cleaning and maintenance.

ByPass

The Project '68 engineers' decision to eliminate Ray's Hill and Sideling Hill tunnels by a four-lane bypass involved over 13 miles of rerouting, changing the face of the mountainside. In the photo below, the white strip clearly indicates the location of the first step in construction, a concrete drain to protect the route from mountain run-off -- not only during construction but throughout its existence.

The new route features special climbing lanes for slow-moving trucks on all up grades. In addition, rerouting involved the relocation and rebuilding of the Breezewood interchange toll plaza and the new east-west service plaza.





The Old And The New

The new four-lane Ray's Hill - Sideling Hill bypass sweeps over the entrance to Sideling which is completely eliminated from the Pennsylvania Turnpike System.

Humble Oil's Sideling Hill Service Plaza Utilizes Total Energy

Plans for the Ray's Hill — Sideling Hill Bypass called for a new service station-restaurant complex, replacing the old westbound-only Cove Valley Plaza. Located between the Breezewood and Fort Littleton interchange, the new facility will serve both eastbound and westbound traffic through use of a crossover.

A unique feature of this project is the fact that it is powered by a total energy system. Basically this means that the entire complex operates without any power supplied from outside. The installation represents a first for Humble and is also the first such service station complex in the east.

The roadside facility, costing an estimated $1.5 million, consists of the development of approximately 36 acres. It includes ramps, lawn and parking areas, an Esso service station with 31 dual gasoline pumps and two dual diesel fuel pumps, a Howard Johnson Restaurant with seating capacity of 306 people, a gift shop and information center, water system, sewage treatment system, complete ramp and yard lighting system, and a power plant which provides an interesting side exhibit for travellers who stop at the location.

The total energy plant was selected, Humble says, because it provides these advantages over the conventional power system:

1. Greater reliability and a 100% standby power source in the event of an interruption.
2. Lower electrical power cost. It makes it feasible to install an all-electric kitchen in the restaurant and lowers the cost of operation of heating and cooling systems, since salvage heat is available from the power generating process.

The total energy system basically consists of two reciprocating 350 KW diesel engines. Daily electrical load is 310 KW in peak hours. Heating load is approximately 1,000,000 BTU/hour and the cooling load is 60 tons. The power plant also supplies the heat to satisfy the restaurant's domestic hot water requirements.

An auxiliary low pressure steam, oil-fired boiler provides peak load steam for refrigeration and heating.

The system is so designed that one engine can effectively provide for all anticipated loads while the second unit is available as a standby. In case of malfunction, the standby engine generator is automatically started.

ACKNOWLEDGEMENTS

Through the ingenuity and perseverance of thousands of Pennsylvanians and many additional people from outside the Commonwealth, Project '68 has brought the original dream to reality. Henceforth the Pennsylvania Turnpike will be, in fact, an intersection-free, four-lane superhighway extending uninterrupted from one end of Pennsylvania to the other.

The Pennsylvania Turnpike Commission gratefully acknowledges the major contributions toward the successful completion of Project '68 by the following:

Michael Baker, Jr., Inc.

Bayley Blower Company

Bellante and Clauss

Frank L. Black, Jr., Inc.

Buchart - Horn

Peter Kiewit Sons' Company

C. J. Langenfelder & Son, Inc.

L - D Building Company

Nager Electric Company, Inc.

Nello L. Teer Company

New Enterprise Stone and Lime Company, Inc.